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PLANNING IN TIME

by

Ricky E. Hardie
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A paper submitted to the faculty of the Naval War College in partial satisfaction of the requirements of the Operations Department.

The contents of this paper reflect my personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

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PLANNING IN TIME

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PREFACE

Nearly all literature on the subject of war references time, most often indirectly and frequently. It is nearly impossible to discuss warfare without using the terms surprise, initiative, speed, synchronization or mass, to name just a few terms that are related to time. It appears, however, that few publications have focused on the subject of time itself as a component of war. Army Field Manual 100-5, Operations, the capstone doctrine manual for Army operations and training since the early 1980's, is close. It lists four basic tenets: initiative, agility, depth and synchronization. Each of these is explained using terms related to time, but time as a component of combat is not addressed directly. That is what this paper attempts to do.

Time is an abstract concept. Man has thought and written about it philosophically, psychologically, mathematically, biologically, historically and culturally. Clocks and calendars represent man's efforts to deal with, in concrete terms, an abstruse subject. Therefore, treatment of the subject of time in warfare must extend from concrete measurement to the ephemeral "sense" of the changing relationship of objects moving in space. An understanding of time in warfare demands that we be willing to think about time in the abstract weil as the concrete.

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I

INTRODUCTION

This paper is about time in warfare. We use the term often in our doctrinal literature. We say that actions occur in time and space, or that we can trade time for space. One reads of timing and synchronization, of speed and quickness, of pace and tempo. We reflect in planning, anticipate in command and expedite as staff officers. These are 'time' terms, and because we use them so often, we ought tc know what a time is and its relation to war, especially if we believe, as Clausewitz states, that "men, time and space" are the "components of combat."

Our military literature doesn't isolate the concept of time as it does forces and space. Yet, time subtly permeates all discussions of warfare. Clausewitz, for example, speaks of "the pulse beat of war", says that "no conquest can be carried out too quickly," enjoins us to "act with utmost speed," points out that frequently "time ruined the plans of the attacker" and observes that "time can allow an enemy to exhaust himself." Sun Tzu, in the Art of War, says that "what is of the greatest importance in war is extraordinary speed," asserts that "the one thing esteemed is divine swiftness," warns against "wasteful delay" and tells us "When the enemy presents an opportunity, speedily take advantage of it." Neither of these men puts the spotlight on time as an element of battle; these are references in passing.

So if the focus is on time as a component of war, the first task is to offer elementary definitions of time and time related terms. Next, to determine how to use time to gain an advantage in war, just like we do with forces and space. Finally, we must prove that successful armies have used time advantages to defeat their adversaries, whether they thought of these victories as time related or not.

From this effort to understand time, we can gain an appreciation for its contributions to success in war. In a world that is becoming more dangerous, in part because events can happen faster, time may be the most important of all components of combat.

II

TIME AND ITS TERMS DEFINED

So what is time? It seems so simple: intuitively, it is. The sun and moon rise and set, both affecting tides, animal activity and human behavior. We sleep, awaken, eat and work according to the hands of a clock, on which are accounted the seconds, minutes and hours in a day. We work, rest, and travel based on a calendar measured against the rhythm of the seasons. We "go faster", "slow down and enjoy life", "take time", "use time", "waste time" and "wage war in space and time", as if the concept of time were as simple as the act of being human.

Indeed, time exists only for humans. It is a fabrication of human consciousness. Alone among animals, man developed the cerebral capacity to remember and order events. He was literally able to <u>create</u> time. Time is an ordered series of remembered events receding backward into the past, and an anticipated series of predicted events extending forward into the future.[1] For these events to exist, man must consciously observe them, and they must be of sufficient intensity to register strongly on man's memory so that they may be ordered and recalled. By ordering and analyzing past events, man can then make predictions about the future, that is, anticipate the occurrence and ordering of events that have yet to exist (the sun will rise, the flowers will bloom, lunch will be at noon). In events of the past are the seeds of all future events. Importantly, the scale (clock, calendar, sun dial) of time is <u>not</u> time, the ordering of events is time.[2]

View time as an arrow with the tip extending into the future. Then, order our recorded and anticipated events along its shaft. This arrow could extend to infinity in both directions if our memories were long enough and our ability to analyze the full ramifications of past events

was perfect. Each event would take up a part of the shaft of the arrow, some a small point, others a larger portion. As events were recorded on the arrow, there would be distance between them. This space, or distance between two events would vary based upon their relative velocities. Before clocks and calendars, man could only note the interval between events as comparatively long or short, that is observe the relational velocity between and of events. Man still does this, of course. Long notes in a musical score may connote a melancholy mood, while loud notes closely spaced together normally create some tension in the listener. No one times the notes of a Broadway musical with a stopwatch, but the velocity (spacing and duration of each note) is compared by the listener. Many of the time related terms we use result from this ordering events, and the size of the gap (velocity of the events) between them.

Pace is an example, defined as "the rate of progress of some activity." It can be as simple as how fast one foot proceeds the other in walking, or a measure of the complex and interrelated activities that occur on an automobile assembly line. Pace generally refers to sequential activities; something must be done a step at a time. In military terms, pace can refer to the rate of advance of enemy formations, or our own. We speak in terms of "fast-paced", "slow-paced", or "pick up the pace." We could be referring to the build up of supplies, the establishment of a beachhead, or the reconstitution of a unit. Individuals and units will establish their own pace of activity or action, or they can be motivated to reduce the space between sequential events (pick up the pace). They can also be conditioned through practice to accomplish certain tasks and actions at an established pace. When they are so conditioned, the interval between events becomes uniform, and tempo is established.

Tempo is an important factor in military activity. It is the pace at which individuals can accomplish movement repetitively. It is the calculated interval at which subunits of an organization complete an event on the time line (convoys or attack echelons, for example). Tempo has symmetry. Both the duration of the events, and the distance between events is constant. Individuals or units conditioned to sustain tempo roll onward as inexorably as the waves of a gentle sea upon the shore. Tempo can be changed; increasing the pace of activity will do it, as events become closer on the time line. Tempo can also be disrupted by enemy activity or unfavorable conditions, Clausewitz's friction of war. Militarily, it is important to establish tempo in our activities and to maintain it, for disruptions are disconcerting to humans conditioned to operating at a certain tempo: disruptions cause tension.[3] People trained to an established tempo can accomplish designated tasks over time with great efficiency; tempo gives them greater physical and psychological endurance. When tempo is disrupted, individuals must increase their physical activity to do the same amount of work, because their momentum is affected. Disrupted tempo also requires that leaders and managers expend greater time and energy managing each activity that was previously done routinely according to an established sequence. Thus, disrupting the tempo of an adversary increases the "friction" of war he must overcome to be successful.[4]

Rhythm is movement with a regular succession of strong and weak elements; "the cyclically repetitive behavior of all the living."[5] Biologically, psychologically and socially, rhythm affects every moment of life; "every living thing that can move does also dance."[6] It varies from culture to culture as evidenced by the differences in dance and music in Eastern and Western cultures. Rhythm differs from tempo in that both the duration and the distance between events may vary. It is

similar to tempo in that events are repetitive over a certain distance on the time arrow. Rhythm in individuals is inculcated biologically, in tactical units psychologically through repetitive experience over time, and in nations by cultural and social experience. These are militarily important.

Circadian rhythm establishes the cycle of biological human activities such as, eating, sleeping and working. Attacks conducted at dawn, when circadian rhythms dictate that sleep should be occurring have often achieved success because the defender was not alert. Units that habitually conduct night operations must be conditioned through training and acclimation to adjusted sleep patterns before peak efficiency may be achieved. Units can be psychologically conditioned to the rhythm of combat activity. Battle -hardened units are those that have become accustomed to the peculiar rhythm of violence and rest that characterizes the ebb and flow of battle. Clausewitz noted these fluctuations: "Violent clashes are interrupted by periods of observation, during which both sides are on the defensive." At the tactical level, artillery units in training establish a rhythm as the three parts of the fire support system, observation computation of data and firing are melded into a continuous flow of activity over time. These three events or activities have different pace and duration, yet viewed together over the course of a fire mission, they establish a rhythm that results in quicker, more accurate fires on the adversary. Culturally and socially, rhythms are a reflection of how society thinks about time. The Western way of war, based upon the Christian concept of time that has a definite beginning and end, seeks a decisive victory as the culminating event of a short, violent struggle. Some Oriental cultures may accept a lengthy, protracted struggle reflecting the social and cultural view of time as a repetitive cycle that spans generations.[i]

Timing is an instant on the arrow of time. It connotates planning some event or activity to occur at a precise instant in the future. An example is the convergence of two or more units moving on separate external operational lines to achieve mass at a point of enemy weakness. Timing synchronizes the ordering of events, whether our own or those of an adversary, the duration of each event and the distance between specified events so as to record them on the time arrow at the desired instant. In a sense, correct timing takes into account pace, tempo and rhythm.

Just a few more points about time terms. Militarily, we must plan. This requires an ability to anticipate, which is the extension of the time arrow into the future based upon the logical analysis of events that have already occurred. Airland Operations doctrine requires that we create events, which when successfully executed, improve our ability to predict the consequences of them. We call this establishing the conditions for decisive operations. By properly preparing the battlefield for the decisive engagement, we create future success. That success itself is contained in the events we have prepared and executed to cause it. "But in war, as in life generally, all parts of a whole are interconnected and thus the effects produced, however small their cause, must influence all subsequent military operations and modify their final outcome to some degree, however slight." Or, "every event is already present in its causes."[5]

III

EVENTS-THE ESSENCE OF TIME

The term event is important to our understanding of time. Events have both mass and velocity. The mass of an event determines how strongly the event is recorded on man's consciousness, and therefore, how much it serves to affect his behavior. Velocity is the relational value of the event to other events, and refers to the duration of each event and the degree of separation (distance) of an event from other events.

The mass of an event, or its magnitude of impact, depends on the duration, intensity or frequency of the event. Events with long duration or great intensity register strongly. Events of shorter duration or lower intensity can achieve mass if they occur several times very closely separated. The cumulative effect of this reiteration of an event gives each successive iteration greater mass.

Velocity is a measurement of how each event relates to other events. Events which have great impact (decisive events) have their roots in previous events of varying intensity and length. The further these previous events are from the decisive one, the less impact they have, and the greater opportunity incurs for other events to impact as well. As Clausewitz stated "The greater the distance between the event and the cause that we are seeking, the larger the number of other causes that have to be considered at the same time." He goes on to say, "...the greater the magnitude of any event, the wider the range of forces and circumstances that <u>affect</u> it."

It is indeed, <u>effects of events</u>, not the events themselves, that are our primary concern. Especially since "War...is not the action of a living force upon a lifeless mass...but always the collision of two <u>living</u> forces."[10] Ultimately in war, our aim is to affect behavior, to

compel the enemy to behave in accordance with our interests, to make him do our will. If what occurs in past events is tied to what will occur in the future, then it must be our aim to cause a series of events that will compel an adversary to behave as we desire. Warfare, then, is a means to strongly record events upon the consciousness of the adversary so as to influence his future behavior. For what is true of the past must also apply to the future; the causes of what will occur are present in the events which have yet to occur.

The history of warfare, especially modern warfare, is the struggle to order events favorably so that they will have the intended effect on an adversary. This statement is true irrespective of space; it applies strategically, operationally and tactically. Broadly, combat is the application of events upon the consciousness of the enemy so as to compel him to act in the desired manner. Successful forces establish a time advantage so that the events of warfare can be ordered in a favorable way. In a potential conflict there exist at least two orderings of events; those of each adversary. These ordered sets of events represent the strategy of the warring parties. Each party seeks to: implement its event order to preclude the adversary from interfering with friendly event implementation; to prevent the adversary from implementing his schedule of events. In other words, defeating the enemy's strategy becomes a matter of reordering his events in your favor, or "creating a situation to which he must conform."[1] To do this, one must establish a time advantage.

Time advantages are relative. An absolute time advantage is rare at any level of warfare, occurring most frequently at the tactical level. Time advantages are achieved through surprise (influencing the enemy event schedule) or by manipulation of one's own event schedule.

IV

SURPRISE: ESTABLISHING A TIME ADVANTAGE

"Surprise lies at the root of all operations without exception, though in varying degrees depending on the nature and circumstances of an operation." Clausewitz goes further to say "The two factors that produce surprise are secrecy and speed."

Secrecy is protecting one's order of events from enemy knowledge. Given that the enemy has attempted to anticipate your events and their order, and your order of events is different to his disadvantage, surprise can be achieved through secrecy. At some point, the adversary will become aware of what you are doing, begin to recognize your order of events, anticipate what you will do next, and react to regain the ability to order events in his favor. What can be achieved, despite this, is a relative time advantage over the enemy, whereby, he is left in a position from which he cannot react effectively to an event or series of events that he failed to anticipate. "When the thunderclap comes there is not time to cover the ears."[12] (Note: See figure IV-1, end of chapter) The effect is transitory. As Michael Handel has pointed out in his treatise on strategic surprise, complete surprise is rarely, if ever, achievable in modern warfare. Surprise can be achieved even when the enemy correctly anticipates your event ordering, but the <u>speed</u> with which you order your events leaves him powerless to regain control of the order and timing of his own events.

"Speed is the essence of war."[13] Speed is the capability to order and reorder events rapidly. It is acting fast to order events favorably regardless of the enemy's capability to react. Technology and training provide speed through improved mobility, increased firepower, reduced vulnerability, greater efficiency in command, control, communications and intelligence, and the capability of subordinate individuals and

organizations to operate at a pace or tempo faster than that the enemy can achieve.

Improved mobility provides the opportunity for positional advantage. The advent of horse cavalry and the use of armored vehicles to maneuver to flank attack were revolutionary concepts of warfare. On a flank, the correlation of forces becomes favorable for success. A form of surprise is achieved because the enemy is placed in a position where his forces are arrayed at a time disadvantage in relation to the point at which he failed to anticipate that the attack would occur. He must then determine the new event order of the attacker, and attempt to reorder his own events until the correlation of forces is in his favor. He must accomplish this reordering of events at a tremendous physical and psychological disadvantage. His mental calculations take place under the tremendous pressure of the imminence of failure or death: surprise reduces the ability to think clearly. Mobility in its highest form allows events to be ordered favorably even when the enemy anticipates them. Air and missile attacks are events which have a high chance of success despite anticipation and preparation of counter-events by an adversary. Conversely, highly mobile forces and systems can be used to reestablish control of event ordering to limit the ill effects that are inherent in being surprised. Reserves, such as attack helicopter units, can be used to overcome the negative effects of surprise. In sum, technology provides improved mobility, which provides speed, which allows event control.

Increased firepower has a profound effect on friendly event ordering and on the magnitude and effect of events ordered against an adversary. Technology has increased the firepower of weapons systems which has reduced the number of events friendly forces must order to create an event of sufficient magnitude to have the intended effect.

Prior to the introduction of cannon artillery, many infantry units had to move into position to achieve a certain mass of rifle firepower. Each unit movement was an event that, subject to the friction of war, extracted the time and energy of commanders at all levels. Massing cannon artillery to achieve an event of similar magnitude and effect reduced the number of friendly events significantly. The result was increased speed at which events of sufficient magnitude could occur. A similar example exists in modern warfare. The atomic bombs which fell on Nagasaki and Hiroshima, thereby compelling the Japanese government to surrender are proof of the speed at which firepower can deliver effects. Without the nuclear weapons, the Allied Forces would have had to conduct several events (conventional bombing, naval engagements, and attack of the home islands) over a period of months to have achieved the same result. With the atomic bomb, it took a few airplanes a few days to convince the Japanese that they needed to order all their future events to conform to the desires of the United States.

Conversely, measures which reduce vulnerability to enemy events and their effects have influence on time. An infantry soldiers uses concealment (siting and moving hidden by terrain or vegetation) and cover (shielding provided naturally by the earth or artificially by armor) to prolong the event of his demise. He thereby increases his own number of event opportunities to impose that ultimate effect on the enemy. Stealth aircraft and titanium shielding are modern parallels. Reducing vulnerability to enemy event ordering concomitantly provides increased opportunities to hold to an order of favorable events. A commander may postpone an attack (reducing the effects of enemy events on his unit) until other friendly events can be implemented which will increase his opportunity for success.

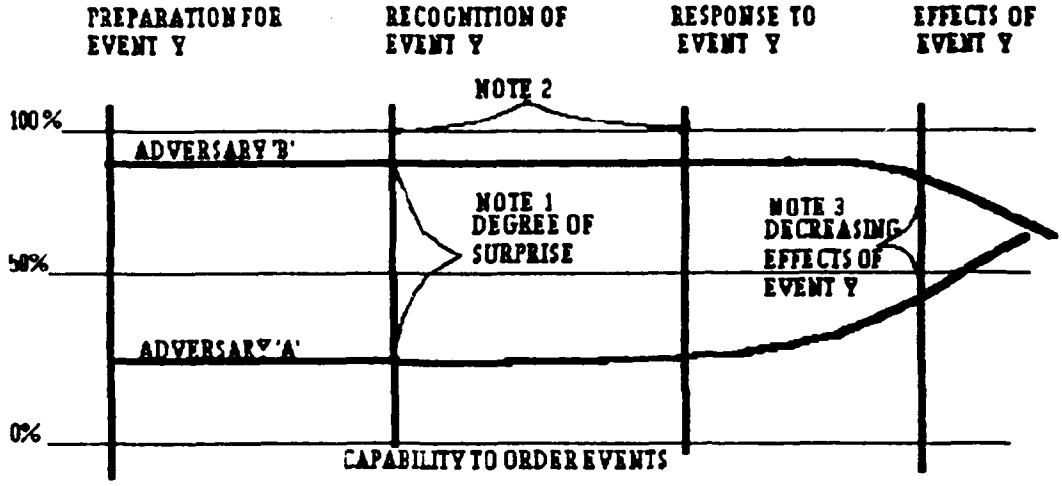
Greater efficiency in command, control, communications and

intelligence enhance speed of operations and can result in considerable advantage in relational event positioning.

Intelligence (the continuing effort to determine the enemy order of events and his capability to execute them), communications (the capability to rapidly transmit information as friendly and enemy event ordering changes), and control (the ability to cause friendly events to occur based upon enemy events as they become known or are anticipated) provide the information and means by which the commander can conspire to control and order events favorably. Sans Clausewitz' 'genius', the commander must rely on himself and his staff to correlate events in time for relational advantage.

An example of this event ordering is the DECIDE-DETECT-DELIVER sequence of targeting that replaced the previous reactionary method of detect, decide, deliver. The current targeting sequence begins with the effort to determine the enemy order of events and anticipates the tempo and rhythm with which the adversary is expected to operate. Then the targetter decides what enemy events are most important to influence with events of his own, establishes the detection means (intelligence gathering assets) to detect designated enemy events and assigns attack means to achieve the desire effects. The means chosen deliver the effects on the enemy, thereby altering his event order in duration, magnitude, or both. The effects of the delivery system may also disrupt the enemy tempo, thereby influencing an entire sequence of his events. Clausewitz would attribute such an outcome to the 'genius' of the commander. Whatever its source, the commander, his staff, or a combination thereof, success demands the presence of that internal metronome, that "marvelous pitch of vision", which balances the sequence and timing of two competitive sets of events and decides what changes will provide relational advantage.

Training also provides significant opportunity to change the event order through speed. The "organizational clock"[14] must be capable of operating at a tempo that gives the commander control of event ordering. Soldiers and units conditioned to a rapid pace, which becomes a tempo and can be maintained for comparatively long periods, and acclimated to a rhythm that sustains operations over the course of conflict can overcome an adversary unaccustomed to comparable rigor. A commander who has a staff that provides information, options and recommendations quickly and correctly, and who has the experience and talent to use well conditioned soldiers and units to impose events upon the enemy will achieve surprise. During World War II, the French had ample forces to reduce the acceleration of the German blitzkrieg of 1940. But the French forces were "operating with chronometers set to 1917 time, a time in warfare when gains were measured in yards per week."[15] Meanwhile, "the Germans were running with timepieces set to the thunder of the mobility brought by the internal combustion engine, typified by the Mark III tank and the Stuka dive bomber."[16] It was not only the equipment that portended a new era in warfare, it was the training of units and staff to the tempo at which this equipment could be employed that heralded a change in the dynamics of the battlefield.



NOTES: Adversary A expects and prepares for event X. Adversary B prepares for and executes surprise event Y.

1. When A recognizes that event Y is occurring, the degree of surprise achieved by B is a function of the relative preparedness for event Y. Adversary A could have formulated a branch plan as a contingency for event Y. Adversary B's preparation will never be perfect in an imperfect world of fog and friction.

2. The ability of adversary A to overcome the effects of surprise. Directly related to the psychologically and physical stamina of adversary A, and the rapidity with which B can execute event Y.

3. Friction, the fog of war and adversary A's response to event Y will cause B to lose capability to control the order of events. Adversary A's response to offset the advantage B has gained through surprise is determined by the five factors that affect enemy tempo and rhythm.

V

PLANNING IN TIME

It is not enough to understand the terms of time. Nor is it sufficient to grasp the implications of speed and secrecy to achieve surprise. We must know how to use this information to plan.

Planning, by definition, is thinking things out in advance. It is, loosely, the inverse of Clausewitz' critical analysis. The first question asked is what effect will cause the adversary to accept the imposition of your will? Enemy capitulation is the ultimate event which holds all events beyond that captive. Second, What event or series of events will have the desired effect? Recall that an event is not an event unless it registers on the enemy consciousness. "The effect that any measure will have on the enemy is the most singular factor among all the particulars of action."[17] Sometimes, of course, our own activities are kept from the enemy so that they do not register as events and so change his behavior; this is the essence of operational security (OPSEC).

After determining our own sequence of events, we attempt to determine that of the enemy. In this analysis, the cultural and societal rhythm of the people is an important consideration which umbrellas all other activities. Since man invented time, its concept is different for independently developed cultures. We noted this in Viet Nam, for example, when the US encountered the "timelessness" of the oriental viewpoint. This was not appropriately considered against the "American way of war" with the emphasis on a short, decisive end to armed conflict. The Vietnamese were willing to accept a sequence of events which, over a long period, would have the cumulative effect on the US. The US forces continued to search vainly for the Mahanian or Clausewitzian decisive battle or series of battles. The Vietnamese

event sequencing was tied directly to the rhythm of their culture, an emphasis on the events spanning several generations rather than several months or years. An understanding of these cultural and social rhythms helps one understand the "type of war in which one is about to engage."[18]

We must evaluate the pace at which an enemy can order events before a relational advantage can be planned. Sometimes, as with the Soviets, his pace is discovered in his doctrinal literature. Soviet echelons conducting offensive operations were doctrinally required to adhere to certain time standards of movement. Knowing that the second echelon regiment of a Soviet first echelon division was to follow 15-30 minutes behind the first regiment was extremely useful in US defensive planning. The US emphasized that interrupting the tempo of the Soviet attack was one key to success; more important, US planners could order events favorably once the enemy tempo was determined. Intelligence gathering, fire support and maneuver could be cued and synchronized based upon the expected enemy tempo. Pace of enemy operations is a function of training, equipment, doctrine, leadership and terrain. In essence, the task of the intelligence community is to determine the enemy pace based upon an assessment of these five time considerations so that operational planners may can order events for success.

The planner who knows what decisive event he must create, the order of friendly events to do it, the expected order of enemy events, must determine the relative pace and tempo of opposing forces. If necessary, time lines can be compared using tables of standards. Where unfavorable sequences exist, planners must create time for friendly forces. This is done by more rapid ordering of events (move faster than the enemy), extending the duration of events (in magnitude or length), making the enemy take longer to execute his events (deception, obstacles, reduction

of mobile forces), or extending the distance between events (choosing to delay your own events or deceiving the enemy into postponing his). Operation OVERLORD provides a superb example of planning that accounted for the comparative capability of two forces to order events, and to plan using the combat component of time.

Operation Overlord planners envisioned the following phases for success: build up forces in Great Britain; move these forces to Normandy and conduct an amphibious landing; establish and expand the beachhead; land additional forces; breakout of the Normandy beachhead; and attack to the Rhine. By 1944, intelligence agencies had a good understanding of Hitler's rhythm, and the capability for the German Army to operate at a high, sustained tempo. In other words, they had a "feel" for how fast the Germans could order events. They calculated that the Germans would like to: detect the landing site early; isolate the landing site; bring air and land forces to bear quickly to throw the Allied forces back into the sea. It was also known that the Germans had insufficient forces to cover all suitable landing sites along the Atlantic coast, but that their air forces could respond rapidly if required. The Allied effort required that planners "create" time.

Three significant time disadvantages required redress. First, the German Luftwaffe had to be incapacitated before the invasion could occur without unacceptable losses. This would alter the speed with which the Germans could order events in their favor by eliminating their fastest weapon system. Second, sufficient German Army forces to contain and repel the landing must be far enough from the landing site to ensure adequate build up of Allied forces to hold the beachhead. Third, the breakout must take place before the Germans could transport additional forces to defend the coast of France. Success of Operation Overlord demanded that these relational events be ordered favorably.

The obvious solution to the problem of the Luftwaffe attack at the landing site was the elimination of the Luftwaffe. Eisenhower created time by postponing the landing (increasing the distance between that event and the build up of forces). He then filled that time gap with repetitive friendly events which took the form of allied air strikes against the Luftwaffe airfields. The resultant destruction of aircraft and loss of close-in airfields reduced the operational tempo of the German force as a whole. For Eisenhower, though, there was some risk in this event reordering. A greater time gap between the build up of forces in Great Britain and the landing, meant a better opportunity for the Germans to discover the location of the landing site. As Sun Tzu remarks, "A course of action which may appear advantageous usually contains within itself the seeds of disadvantage. The reverse is also true." In the end, Eisenhower successfully reordered events, the cumulative effect of which was the inability of the German Luftwaffe to significantly affect Operation Overlord.

Eisenhower and his staff understood the tempo of both the German Army (determined through experience and intelligence) and the Allied assault forces (established by training and rehearsals). If the Germans could locate sufficient forces near Normandy, they would be able to order events in the beachhead area in their favor. Eisenhower had to create a time advantage for the assault forces to be successful. He did this in two ways. First, he ensured tight operational security (OPSEC); that is he did not allow the enemy to discover the order of his events until surprise had been achieved. Second, he used deception to separate the bulk of the German Army in time from the Normandy Coast. The deceptive portrayal of the landing site at Calais denied the Germans a favorable order of events in response to the landing at Normandy; they could not move sufficient forces quickly enough to prevent the landing.

Allied air interdiction had increased the response distance on the time arrow even further for the Germans; destruction of railways, bridge and highways had lengthened their movement events. In all, this phase of time creation was very Sun Tzuian, "...divert the enemy by enticing him with a bait. So doing, you may set out after he does and arrive before him." His way of saying, order events in your favor; create time.

The Allies also had to ensure that the enemy could not order events to contain the bridgehead once it was established, nor affect the Allied breakout and drive to the Rhine. Here, the Germans themselves created a time advantage for the Allies. Operation Barbarossa had tied up German Divisions in the East that could have been relocated in the West. (The Germans frequently gave away time; their infamous two-day halt which allowed the B tish and French to quintuple the number of combatants evacuated from Dunkirk is another example.) With a fully capable Air Force, Eisenhower was able to order events favoring the allies (through speed), and the Germans, having lost the technologically most capable means of ordering events rapidly (the Luftwaffe), were incapable of wresting the initiative from the Allies.

VI

ORDERING VERSUS SPEED

The true implication of time is the ordering of events and the flow of them. We tend to concentrate on time measurement without first understanding how events might be ordered to our advantage. Only then should we consider how the flow of events can contribute most directly to the accomplishment of the strategic, operational or tactical objective. The movie "Silence of the Lambs" contains a vivid example of this. It shows how an objective that cannot be obtained by speed, can be attained by thoughtfully ordering events.

In the movie Dr. Hannibal Lecter, the psychotic murderer who allegedly cannibalized his victims, escapes from custody of police. This is no mean feat since he is encaged in a cell on the upper floor of a building that is heavily guarded by police. Speed, the ability to rapidly order and reorder events, would be of no use in this escape. Dr. Lecter had to create time by ordering events in his favor. When the police entered the floor of the building where Lecter was imprisoned, Lecter's first event occurred. There, hanging on the bars of the cell, high above the floor, was the body of a policeman, silhouetted against the lights on the far wall, and gory in every detail. The magnitude of this event was reflected in the response of the witness policemen, all of whom could readily empathize with that fellow strung, bird and bat-like above them. Event one set the stage for event two, the discovery of another brutalized policeman. This second event was only slightly less gory than the first; an apparently dead policeman lay on the floor. His body covered with blood and his face a gory mass, it appeared as though he had been chewed or eaten. The discovery that this policeman was alive prompted immediate and rapid events by the police to get him to a hospital, events that were even more rapidly ordered when the

unconscious policeman began to convulse as if in extremis. As the victim was being wheeled out of the building the police encountered a third event, the discovery of a body on the roof of the elevator. With utmost caution and care, mindful of how dangerous Dr. Lecter was, the police slowly moved in on the prone figure only to discover that it was dead, and it was not Dr. Lecter. Too late, the police realized that the "injured policeman" they had dispatched to the hospital was their erstwhile prisoner. Lecter had peeled off the face of the policeman found dead on the elevator, and covered his own with it to deceive the police. By this events, Dr. Lecter had achieved a relational advantage in time.

Lecter knew that the first event the police saw must surprise them. This would upset their rhythm and tempo and make them unable, momentarily, to gain control of their own actions, to order events in a way that would succeed in the recapture of their prisoner. Dr. Lecter continued to control the ordering of events once he had gained a relational and psychological advantage. The face of the injured policeman was so ghastly, and engendered such shock in those who observed it, that they hastened this disguised Dr. Lecter from the building. Upon discovering the man on the elevator roof, the police became slow and cautious in approaching what they thought to be a dangerous criminal. In these last two instances, Dr. Lecter showed that he understood the pace of the policemen under two very different conditions. He used this knowledge to order events so that his disguised body was rushed to the hospital <u>before</u> the true identity of the man on the elevator roof could be determined. In "Silence of the Lambs", Dr. Lecter was portrayed as a demented 'genius'; Clausewitz would have recognized him.

VII

CONCLUSION

Understanding the relationships of time to warfare, and applying them in conflict is the essence of military genius. Napoleon's victory at Lake Guarda was the result of vision that accounted for the comparative tempo of his and his adversary's forces in operations over the terrain (space) in which the anticipated engagements would be fought. His failed to accurately gauge the pace and tempo required to defeat the Russian Army over a broad expanse of space in 1812, and suffered the onslaught of winter and defeat. The Germans failed to concentrate forces during Operation BARBAROSSA. They were then unable to establish an order of events that would win Leningrad and Moscow before winter destroyed their offensive. This failure was the seeds of future reversals, one leading to another until they surrendered. The successful commander, whether through his genius or the effective services of his staff, will display that "marvelous pitch of vision" that sees the future ordering of events, their timing, and the operational pace and tempo of both his forces and the enemy's. Only then can he "create time" for positional advantage and deliver the effect on the adversary that will result in a decisive event.

NOTES

1. K. G. Denbigh, An Inventive Universe (New York: George Braziller, Inc., 1975), p19.

2. Ibid., pp. 19-20.

3. J.T. Fraser, ed, The Voices of Time (New York: Doubleday, 1948), p. 184.

4. Ibid., p. 184.

5. Ibid., p. 161.

6. Ibid., p. 201.

7. Ibid., p. 63.

8. Ibid., pp. 77 and 85.

9. Michael A. Howard and Peter Paret, Carl von Clausewitz: On War (Princeton: Princeton University Press, 1976), p158.

10. Ibid., p. 106.

11. Samuel B. Griffith, Sun Tzu: The Art of War (Oxford: Oxford University Press, 1963), p. 93.

12. Ibid., p. 70.

13. Ibid., p. 134.

14. Kenneth F. McKenzie, "Maneuvering in Time." Marine Corps Gazette, February 1991, p. 73.

15. Ibid., p. 75.

16. Ibid.

17. Howard and Paret, p. 139.

18. Ibid., p. 579.

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